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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,316	03/17/2004	Hans Borneby	60,130-1924/03MRA0117	3896
26096	7590	05/16/2007		
CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			EXAMINER MERKLING, MATTHEW J	
			ART UNIT 1709	PAPER NUMBER
			MAIL DATE 05/16/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/802,316

Applicant(s)

BORNEBY, HANS

Examiner

Matthew J. Merkling

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:

On page 4 of the specification, in line 2 of paragraph 15, the welder is designated the reference number "20a", when it should be "28" (see Fig. 2). "20a" refers to the die.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5 and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by De Sousa et al. (US 5,937,516).

Regarding claim 1, De Sousa discloses a method of manufacturing a catalytic converter comprising the steps of:

a) placing a first liner into a second liner, the first liner containing a catalyst (col. 5 lines 53-55);

b) plastically deforming opposing ends of the liners into engagement with one another forming a cavity between the liners (Fig. 11, (66), Fig. 15, (98)) (col. 5 lines 55-59, col. 6 lines 19-25); and

c) securing first and second connecting tubes to the opposing ends (col. 1 lines 31-33).

Regarding claim 2, De Sousa further discloses the liners are cylindrical (See Figs. 7, 8, and 9).

Regarding claim 3, De Sousa further illustrates a conical flange (Fig. 15 (101)) having portions of the liners overlapping (see Fig. 15) and engaging one another.

Regarding claim 4, De Sousa, as discussed in claim 3 above, further discloses welding the connecting tubes to the flanges of the opposing ends (col. 1 lines 31-33).

Regarding claim 5, De Sousa further illustrates the forming of a cavity between the first and second liners (see Fig. 15, col. 6 lines 19-25).

Regarding claim 8, De Sousa discloses a catalytic converter comprising:

a first liner (Fig. 15, (99)) housing a catalyst (52); and

a second liner (Fig. 15, (98)) arranged about the first liner in spaced relationship therewith forming a sealed cavity (see Fig. 14 and 15) providing a gap about the circumference of the first liner extending at least a length of the catalyst (see Fig. 14).

Regarding claim 9, De Sousa, as discussed in claim 8 above, further discloses opposing ends (see Fig. 14) of said first (99) and second liners (98) tapered inwardly (see Fig. 15) and in engagement with one another forming said sealed cavity (See Fig. 15).

Regarding claim 10, De Sousa further discloses welding the connecting tubes to the flanges of the opposing ends (col. 1 lines 31-33).

Regarding claim 11, De Sousa, as discussed in claim 10 above, further illustrates the liners and connecting tubes having a generally cylindrical cross section (See Figs. 7, 8, and 9).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Sousa et al. (US 5,937,516) in view of Wieres (US 6,334,981).

Regarding claim 6, De Sousa, as discussed in claim 5 above, discloses all of the claim limitations, but fails to teach the liners spaced apart from one another by 6.35mm (0.25 inch) or less forming an air gap.

Wieres also discloses a catalytic converter with two liners around a catalyst substrate.

Wieres teaches the gap (Fig. 1, (10) between the first (1) and second liners (2) to be 0.3mm – 2mm in size in order to improve resistance to radial deformation, reduce the weight of the catalytic converter, and provide better thermal insulation properties (col. 4 lines 30-34).

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It would have been obvious to one of ordinary skill in the art at the time of the invention to use the width of the gap between the liners of Wieres, in the catalytic converter of De Sousa in order to improve resistance to radial deformation, reduce the weight of the catalytic converter, and provide better thermal insulation properties.

Furthermore, it was well known in the art at the time of the invention that the size of the gap between a heat shield and the catalyst substrate has significant effect on the thermal insulation and mechanical strength of the catalytic converter (as is discussed in Wieres, above), the size of the gap is not considered to confer patentability to the claim, as the size of the gap is a variable that can be modified, as is taught by Wieres, to alter the thermal properties and strength, the size of the gap would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed size of the gap cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the size of the gap in the De Sousa to obtain the thermal and mechanical stability properties (In re Boesch, 617 F. 2d. 272,205 USPQ 215 (CCPA 1980)). Since it has been held that where general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (In re Aller, 105 USPQ 223).

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Regarding claim 7, modified De Sousa, as discussed in claim 6 above, further discloses the air gap extends circumferentially about the first liner of the catalyst (See Fig. 14).

### ***Prior Art***

Prior art not relied upon but considered relevant to instant application:

US 2006/0085980  
US 2004/0081594  
US 2005/0036923  
US 5,293,743  
US 5,829,132

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Merkling whose telephone number is 571-272-9813. The examiner can normally be reached on Monday - Friday 8:30-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa D. Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*MM*

MJM

*Alexa D. Neckel*  
ALEXA D. NECKEL  
SUPERVISORY PATENT EXAMINER